

ON SOME SOUTH AUSTRALIAN POLYZOA.

By P. H. MACGILLIVRAY, M.A., M.R.C.S., F.L.S., Corr. Memb.

[Read June 7, 1889.]

Plate II.

The present paper contains a list of South Australian Polyzoa, which I have recently had occasion to examine. They were mostly contained in a parcel sent for identification from the Adelaide Museum, but include also some given to me by the Rev. Dr. Porter. The total number of species is 64, of which four are now described for the first time. It is hoped that this very imperfect list may serve as a nucleus to which South Australian naturalists will add many of the other species which undoubtedly occur on their coasts.

The Australian seas are peculiarly rich in Polyzoa, from Victoria alone upwards of 360 species having already been recorded. Most of these have been obtained in the neighbourhood of Port Phillip Heads, where, mainly owing to the skill and indefatigable industry of Mr. J. Bracebridge Wilson, a more extensive series has been found than is known to occur in any equal extent of sea elsewhere. There is every reason to believe that parts of the South Australian coasts, notably the Backstairs Passage, when systematically explored, will yield an equally rich harvest.

CLASS POLYZOA.

ORDER I.—PHYLACTOLEMATA, *Allman*.SUBORDER I.—LOPHOPEA, *Allman*.

FAMILY PLUMATELLIDÆ.

PLUMATELLA, *Lamk.**P. Aplinii*, McG. Torrens River.ORDER II.—GYMNOLEMATA, *Allman*.SUBORDER I.—CHEILOSTOMATA, *Busk*.

FAMILY AETEAIDÆ.

AETEA, *Lamx.**A. anguina*, Linn., sp. Encounter Bay.*A. recta*, Hincks. Glenelg.

FAMILY CATENICELLIDÆ.

CATENICELLA, *Blainville*.

- C. lorica*, Busk. Glenelg.
C. ventricosa, Busk. St. Vincent's Gulf; Encounter Bay.
C. hastata, Busk. Glenelg; St. Vincent's Gulf.
C. cribraria, Busk. St. Vincent's Gulf; Encounter Bay
C. rufa, McG.
C. margaritacea, Busk. Glenelg; St. Vincent's Gulf; Spencer's Gulf.
C. elegans, Busk. Glenelg; St. Vincent's Gulf; Spencer's Gulf.
C. Dawsoni, Wyv. Thomson. Some fragments occur which seem referable to this somewhat doubtful species.
C. fusca, McG.
C. crystallina, Wyv. Thomson.

CALPIDIUM, *Busk*.

- C. ponderosum*, Goldstein, sp. St. Vincent's Gulf.

FAMILY CELLULARIIDÆ.

CELLULARIA, *Pallas*.

- C. cuspidata*, Busk.

SCRUPOCELLARIA, *Van Beneden*.

- S. scrupea*, Busk. Some very imperfect fragments.

MENIPEA, *Lamx*.

- M. crystallina*. Busk, sp. St. Vincent's Gulf.

- M. Porteri*, n. sp. Pl. ii., figs. 1—1b.

Zoarium dichotomously branched, branches articulated by double tubes. Zoœcia biserial, about 5-7 in an internode, elongated and narrowed downwards; aperture elliptical and occupying about two-thirds of the front, margin slightly thickened; three spines, the lower clavate or bifurcate, on the outer side above, and two simple spines on the inner side; scutum large, lamina expanded, peduncle narrow. Lateral avicularia rare, large, situated on the upper part of a zoœcium, rostrum with a sharp, curved beak, the narrow mandible directed horizontally outwards. No anterior avicularia. Oœcia large, rounded, with a row of round foramina along the upper edge.

This species, which I dedicate to the Rev. Dr. Porter, from whom I first received a specimen, grows in small tufts, not exceeding half an inch in height, on algæ. The scutum is large, somewhat reniform and saccular. The lateral avicularia are rather scarce, many internodes not showing them and others having only one; they are of large size, although not always so

large as that figured. There are no anterior avicularia. The oæcia are large, pearly, and have an irregular row of foramina along the upper edge.

FAMILY SALICORNARIIDÆ.

CELLARIA, *Lamx.*

C. australis, McG. St. Vincent's Gulf.

C. rigida, McG. Kangaroo Island.

FAMILY BICELLARIIDÆ.

BICELLARIA, *Blainville.*

B. grandis, Busk. St. Vincent's Gulf.

STIRPARIA, *Goldstein.*

S. glabra, Hincks.

BUGULA, *Oken.*

B. cucullata, Busk. Brighton; Kangaroo Island; St. Vincent's Gulf.

B. dentata, Lamx.

B. neritina, Linne, sp.

FAMILY FLUSTRIDÆ.

FLUSTRA, *Linn.*

F. denticulata, Busk.

CARBASEA, *Gray.*

C. pisciformis, Busk. St. Vincent's Gulf.

FAMILY MEMBRANIPORIDÆ.

ELECTRA, *Lamx.*

E. flagellum, McG. A very imperfect specimen.

BATHYPORA, *McG.*

B. bicolor, Hincks, sp. (*Membranipora bicolor*, Hincks, in Ann. & Mag. Nat. Hist., Feb., 1881.)

MEMBRANIPORA, *Blainville.*

M. pyrula, Hincks. St. Vincent's Gulf.

AMPHIBLESTRUM, *Gray.*

A. permunitum, Hincks, sp. St. Vincent's Gulf.

FAMILY MICROPORIDÆ.

THAIROPORA, *McG.*

T. Woodsii, McG. Glenelg.

T. Jervoisii, Hincks, sp. St. Vincent's Gulf.

T. Whittelli, n. sp.; fig. 2. Zoarium very narrow, linear, adnate. Zoœcia in regular transverse series, elongated, quadrate, separated by distinct thickened margins, membrano-calcareous in front, with a large transverse bullate enlargement immediately below the mouth; mouth rounded above, slightly narrowed below, a small mamilliform process on one or both sides.

I have much pleasure in associating Dr. Whittell's name with this elegant species. Its generic position may be somewhat doubtful, but its characters agree on the whole with those of the other species of *Thairopora*, from which it chiefly differs in the large bullate enlargement below the mouth. In the youngest zoœcia this part of the cell is marked off by a fine transverse ridge, between which and the mouth the enlargement becomes developed. It has no communication with the main body of the zoœcium. The transverse arrangement of the zoœcia occurs also in *T. dispar* and *T. Woodsii*. The mouth is placed on a somewhat lower level, and slopes slightly backwards. I have only seen the specimen figured, and an examination of others would be desirable.

FAMILY CRIBRILINIDÆ.

CRIBRILINA, *Gray.*

C. monoceros, Busk. St. Vincent's Gulf.

FAMILY MICROPORELLIDÆ.

ADEONA, *Lamx.*

A. foliacea, Lamx.

A. cellulosa, McG.

A. grisea, Lamx.

ADEONELLOPSIS, *McG.*

A. foliacea, McG. Encounter Bay.

A. Zietzii, n. sp.; fig. 3. Zoarium encrusting. Zoœcia irregularly arranged, ovate, distinct; mouth subcircular with the lower lip hollowed, or semicircular with the lower lip nearly straight; surface tubercular and perforated, usually a large nodular mass below the mouth, and occasionally others similar at the sides; zoœcial pore subcentral, entire, or stellate. Oœcial cells large, surface with large nodosities round the margins, especially above, pores usually two or three, stellate, in a central depression; mouth wide, arched above, straight and projecting forwards below. St. Vincent's Gulf.

The specimens examined surround the stems of a small alga. They are of a leaden grey colour, owing to the presence of a rather thick epitheca. The whole surface is rough with small rounded nodules, among which, when the epitheca is removed by incineration, numerous small rounded foramina are seen, especially along the margin. There is usually a large, glassy nodule between the lower lip and the pore which it frequently overlaps and conceals. Other larger ones are also common to the sides of this and towards the margins of the cells. The pore is small and plain or slightly stellate. The oœcial cells are very large, with numerous large nodules either round the whole margin or confined to the upper part, leaving a central depression in which are one or several stellate pores. The mouth is very wide, not so lofty proportionately as in the others, and has the lower lip straight or slightly convex. In many of the zoœcia at the lower edge of the suboral nodule is a minute avicularium with the point of the mandible directed upwards and the base resting on the pore.

FAMILY ESCHARIDÆ.

SCHIZOPORELLA, *Hincks.*

S. schizostoma, McG. St. Vincent's Gulf.

S. triangula, Hincks. Glenelg; St. Vincent's Gulf. The specimen of this occurs in the Hemeschara-form.

The zoœcia are very irregular in size and shape, confusedly arranged and separated by prominent raised lines. The oœcia are abundant and very characteristic. The lower edge is produced downwards into one or more blunt processes, while a similar, sharper process rises upwards from each side of the zoœcial oral notch.

S. lata, McG.

The specimen of this species occurs as a beautiful branched and astomosing tube, which has evidently been moulded round a sponge, of nearly three inches in greatest extent, the diameter of the tubes being in some parts a quarter of an inch.

S. biturrita, Hincks. Brighton.

PARMULARIA, *Busk.*

P. obliqua, McG. St. Vincent's Gulf.

SMITTIA, *Hincks.*

S. Landsborovi, Busk. Kangaroo Island.

S. trispinosa, Johnston, sp.

The only specimen of this species is bilaminar, and forms a beautiful foliated ribbon-like zoarium extending up and round the narrow stem of a black alga for a distance of about three

inches, the ribbon at its widest part being about half an inch. The orifices of the marginal zoecia are nearly circular, with a prominent denticle; in the older the peristome is much produced as in the var. *bimucronata*. The avicularia, when present, are usually large, by one side of the mouth, with the mandible pointed downwards. There are numerous oecia with large perforations.

MUCRONELLA, *Hincks*.

M. Elleri, McG. St. Vincent's Gulf.

M. papillifera, McG.

ADEONELLA, *Busk*.

A. platalea, Busk. St. Vincent Gulf.

FAMILY CELLEPORIDÆ.

LEKYTHOPORA, *McG*.

L. hystrix, McG.

CELLEPORA, *Fabricius*.

C. lirata, McG.

C. cidaris, McG.

C. verrucosa, McG.

SCHISMOPORA, *McG*.

S. costata, McG.

FAMILY RETEPORIDÆ.

RETEPORA, *Imperato*.

R. phænicea, Busk. Kangaroo Island.

R. monilifera, McG., var. *sinuata*.

R. monilifera, form *arcuata*. A specimen occurs differing especially in the oecium which it is desirable to distinguish. The zoarium, about three and a half inches in longest diameter, forms a tubular and calyculate mass. The fenestræ are oval, narrower than the trabeculæ. The peristome of the zoecia is produced with a loop-shaped notch, on one side of which is a rounded avicularium. There are also frequent elliptical avicularia on the front of the zoecia, and horizontal avicularia on the inner edge of the lower part of the fenestræ. The oecia have an arched or angled beaded line or stigma without vertical extension. The posterior surface is faintly vitricate and granular, with small elliptical avicularia, especially towards the margin of the fenestræ.

I am not satisfied that the forms I have described as *munita* and *umbonata* should not rather be considered as species, in which case this would take similar rank.

SUBORDER II.—CYCLOSTOMATA, *Busk.*

FAMILY CRISIIDÆ.

CRISIA, *Lamæ.*

C. acropora, *Busk.* St. Vincent's Gulf.

FAMILY IDMONEIDÆ.

IDMONEA, *Lamæ.*

I. radians, *Milne Edwards.*

I. Milneana, *d'Orbigny.*

SUBORDER III.—CTENOSTOMATA, *Busk.*

FAMILY VESICULARIIDÆ.

AMATHIA, *Lamæ.*

A. australis, *Tenison Woods.*

A. pinnata, *Kirkpatrick.*

A. distans, *Busk.* Of this I have examined two small specimens, not very perfect, but still sufficient to show their identity with the form described from off Bahia in the Challenger Polyzoa. It is readily distinguished from our other Australian species by the series of zoecia describing a single—sometimes not quite complete—spiral round the upper half of the internodes.

VESICULARIA, *J. V. Thomson.*

V. bilateralis, n. sp.; fig. 4. Zoarium cylindrical, confervoid, branched, articulated, each internode giving origin to three arranged in a verticillate manner. Zoecia disposed in two thickly clustered series on opposite sides of the branches, occupying the whole length except for a short distance at the base; ovate, length 0.4 mm., diameter about 0.25 mm.

The only specimen I have seen is probably a fragment of a larger mass.

EXPLANATION OF FIGURES.

Figs. 1 and 1a. *Menipea Porteri*, front view, magnified. Fig. 1b. Posterior view of same.

Fig. 2. *Thairopora Whittelli*, natural size. Fig. 2a. Two young zoecia near the growing end, highly magnified. Fig. 2b. Two series farther back, showing fully-formed zoecia.

Fig. 3. *Adeonellopsis Zeitzii*, two zoecia, magnified. Fig. 3a. Small portion magnified, showing zoecia and oöcial cell.

Fig. 4. *Vesicularia bilateralis*, natural size.